

LASER-BASED CLEANING DEVICE FOR FILM ANALYSIS TOOL

Gary R. Janik

Patrick M. Maxton

ABSTRACT OF THE DISCLOSURE

A system for analyzing a thin film uses an energy beam, such as a laser beam, to remove a portion of a contaminant layer formed on the thin film surface. This cleaning operation removes only enough of the contaminant layer to allow analysis of the underlying thin film, thereby enhancing analysis throughput while minimizing the chances of recontamination and/or damage to the thin film. An energy beam source can be readily incorporated into a conventional thin film analysis tool, thereby minimizing total analysis system footprint. Throughput can be maximized by focusing the probe beam (or probe structure) for the analysis operation at the same location as the energy beam so that repositioning is not required after the cleaning operation. Alternatively, the probe beam (structure) and the energy beam can be directed at different locations to reduce the chances of contamination of the analysis optics.